

Understanding the Impact of Knowledge Sharing through Enterprise Social Networking (ESN) on Service Innovation

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Abstract

As the service sector has grown significantly in recent years, researchers are paying increasing attention to the co-creation and the application of knowledge in the service innovation. Knowledge sharing maybe a key driver of service innovation, as it encourages decisions to apply knowledge into products, services and organizational designs. The emergence of social media technologies, especially enterprise social networking (ESN), has made knowledge sharing easier, but has also led to some negative outcomes. These negative outcomes are low productivity, interpersonal conflict and possibility of leaking out sensitive information. The purpose of this study is to understand how knowledge sharing through ESN can influence innovation in the service industry, and how the strength of this relationship is affected by the governance of ESN. The paper puts forward a conceptual model and explains how it will be examined used mixed methods. We report on on-going data collection and emergent findings on our preliminary data acquired from interviews. The study will help managers understand how ESN can be used to support innovation in the service industry.

Keywords: knowledge sharing, service innovation, ESN, governance

1. Introduction

Services are intangible and heterogeneous [1] and their co-creation requires the application of knowledge [2]. Thus, service firms need to possess a variety of knowledge on products, processes and organizational design to meet their customers' needs and to deliver better service [3][1]. This has led service firms to invest significantly in knowledge management (KM) systems [4] to obtain, organize, and exchange the valuable

knowledge needed to innovate [5]. However, traditional KM systems are less flexible, have rigid participation boundaries, and are not easy for users to customize or modify [6]. These limitations have become especially visible when compared against social media technologies for external use. This has encouraged firms to adopt the enterprise version of social media applications (known as enterprise social network or ESN) to share knowledge internally [7][8]. The use of ESN changes the practice of knowledge sharing, making it more open, continuous and visible [9].

While the importance of knowledge in the context of services has been widely discussed, there is an underlying issue regarding the use of ESN for knowledge sharing. As ESN use can lead to greater social interaction and collaboration than traditional knowledge management systems [10][11], it can also lead to negative outcomes. First, ESNs, by providing a platform for individuals to socialise, can distract employees from their work and may lower their productivity [10]. Second, the comments on ESN posts may make employees more aware of their differences with their peers, potentially leading to interpersonal conflict [11]. Third, by making knowledge sharing much more convenient and since ESN use can extend beyond a firm's boundaries, ESNs may make it easier for employees to leak firm-sensitive information to external parties, either deliberately or accidentally [11], hurting a firm's innovativeness [17]. If the potential negative impacts of ESN use are not well managed, the impact of knowledge sharing through ESN on service innovation will be limited. One way of managing the use of ESN effectively for knowledge sharing is by placing an appropriate governance mechanism [12]. Governance in this context refers to mechanisms (formal and informal) that are used to ensure that knowledge is shared in the preferred direction (i.e. to support innovation) when ESN is used [12][13].

The use of ESN is increasingly adopted by firms [6][29], and this has extended the use of ESN for knowledge sharing to improve innovation. In this regard, the use of governance to support knowledge sharing practice through ESN needs to be examined. What motivates this research is the growing demand and widespread interest in ESN use for knowledge sharing, as articulated by researchers, and the need to understand how governance can influence the dynamic nature of ESN use for knowledge sharing to improve innovation in the service sectors. Therefore, the purpose of this research is to investigate the governance mechanisms to support knowledge sharing using ESN in service innovation.

Likewise, this study's research question is: *How does the governance of ESN impact on service innovation?*

To address the above research question, a conceptual model is developed integrating an overarching theory using knowledge management and governance. To test this new phenomenon, a mixed method (sequential) design is proposed. In the following sections we address the literature review and conceptual model in brief, followed by the research methods and findings from our interviews.

2. Literature review

2.1. Service innovation

Service innovation refers to how firms develop the core service products, create value for customers and offer improved services [1]. Some argued that value is not 'what firms produce as output but how firms can better serve' [14, p. 5). Others have related service innovation with the value of co-creation, thereby using service dominant logic (S-D logic) to explain the involvement of customers and firm during the development of innovation [15] [16]. S-D logic proposes that service is the central mechanism of any economic exchange and conceptualizes it as the 'process of application of specialized competences (including operant resources such as knowledge and skills) through deeds, processes and performance' [14]. Value co-creation can facilitate interaction among diverse actors, thereby generation of knowledge to stimulate innovation [15]. Both inter and intra-organizational services can be conducted to generate knowledge [7]. Inter-organizational service is based on the interaction with customers, suppliers and other stakeholders, whereas intra-organizational service is about integrating employees sharing knowledge into service innovation [7]. Intra-organisational knowledge sharing includes

getting information from different sources, as well as sharing experiences among individuals across departments and systematically storing that information as organisational memories [18]. The underlying assumption is that the more employees share knowledge, the more efficient and innovative they are [19]. The next section examines knowledge sharing in more detail.

2.2. Knowledge sharing

Knowledge is an unique resource [19] [20], especially for service firms, which have few tangible resources [16]. This makes knowledge sharing a valuable activity in the service industry. Knowledge sharing is defined as collaborating, solving issues with individuals [21], as well as reusing and transferring experience-based knowledge within the organization [7]. In this respect, an organisation's primary function is to integrate and coordinate the knowledge of individuals [18] [20], and address related issues such as organisational learning, decision-making and innovation [18]. How knowledge is shared depends on whether it is personalized or codified [22]. Personalized knowledge emphasises the human dimension of knowledge [18], as knowledge sharing takes place through people-to-people contact [22] and is based on social interaction [22] [23]. Codified knowledge, on the other hand, emphasises the systemic dimension of knowledge [23] where knowledge is shared using a people-to-document strategy [22]. When knowledge is codified, companies can reuse knowledge [23] [24] quickly and at little cost.

Codified knowledge can be shared using knowledge management systems (KMS) [23], while personalized knowledge can be shared using face-to-face interaction [20]. The emergence of social media technologies, especially enterprise social networking (ESN), has the potential to significantly change how knowledge is shared [7]. In the next section, the use of enterprise social networking for knowledge sharing is discussed.

2.3. Enterprise social network (ESN)

Social media that is generally used for internal communication by employees is referred to as enterprise social network (ESN) [11]. ESNs are usually cloud-based solutions, such as internal wikis, blogs, Yammer, SharePoint, Slack, Chatter, IBM Connection, Jive, and Workplace by Facebook [6][29]. Most information system (IS) and organizational researchers have used diverse terms to denote ESN in their research (See appendix 1). The current study is based on ESN for two reasons: its social nature and networking capabilities.

ESN allows employees to: a) communicate with co-workers and develop interpersonal communication; b) see who is connected with whom; c) edit, post and comment on others' work, and finally, d) view messages by anyone else in the organisation anytime and anywhere [7] [25].

Capturing personalized knowledge can be difficult because it resides in the minds of individuals and is also difficult to communicate [26]. Technologies such as blogs, wikis, and discussion forums can overcome these problems [27] [28], as they reduce the time and effort required to interact face-to-face. Since discussion forums and wikis are used for sharing information and for collaboration, they can be referred to as conversational technologies [27] [28]. Some authors used the term 'online communal knowledge conversation' to indicate how these technologies enable the continuous sharing of knowledge in an open and visible (communal) way [9]. Dynamic, decentralized knowledge sharing through social media also allows the communal presentation of individual knowledge [30]. With older technologies, such as e-mail, users can see the connections they are personally involved with but not the connections of others. However, with social media, individuals can see who is connected with whom and how individuals are connected with content [30]. This connectivity is referred as "networked-informed associating" that increases the productivity of conversations about knowledge [9].

As knowledge sharing has moved online, ESN has become an important channel for knowledge sharing. However, ESN use could produce both good and bad outcomes. The good outcomes are better collaboration and participation in sharing information and resources [11]. The possible negative outcomes include lower productivity, interpersonal conflict, and the loss of confidential information [10] [11]. To balance these outcomes, firms may need to establish governance mechanisms [13]. In the following section, we elaborate how knowledge sharing through ESN could be governed.

2.4 Governance of knowledge sharing and ESN

Governance in this study's context refers to the mechanisms that can influence knowledge sharing, integration, and creation into a preferred direction [31]. Governance can be formal or informal, depending on the context. Formal governance mainly involves organisation structures, routines and practices, while informal governance is based on networks and cultural practices, such as rituals [31]. According to Turner and Makhija [32] it is possible to provide rules and corrective action with codified knowledge as employees

can be given a clear direction and procedures to engage. With personalized knowledge, on the other hand, a clear direction is difficult because knowledge is depending on individual prior experience [32]. In this respect, knowledge governance can encourage to address 'codified procedures and rules to obtain operational guidance' (formal governance) and increased to build social interaction [13] and trust (informal governance) that could reduce risk of knowledge leakage [11]. Governance in the context of this study examines how obstacles are removed to foster knowledge sharing in organisations [33] [34]. Social media governance refers to policies and documents that guide organisational use of social media [35]. These policies are not only based on directions, and procedures, but also the allocation of resources [36]. According to Boudreaux [37], social media guidelines help employees 'understand the boundaries of social media activities' (p. 274). It is also important to educate employees with proper guidelines on the use of social media [12], focusing on both personal responsibility as well as responsibility towards organisation [13].

The S-D logic perspective posited the interaction between firm and customers and extended this view to include the overarching perspective of knowledge management. In this respect we focus on knowledge as a strategic resource and thereby sharing integrated knowledge (codified and personalized) and governance approach (formal and informal) as a potential to the success of service innovation [32].

3. Conceptual Model and Methodology

The conceptual model is developed (see Figure 1) in this research based on the literature. A positive relationship is shown between knowledge sharing using enterprise social networking (KS-ESN) and service innovation (SER-INN) - (H1); and governance is used to strengthen the relationship between KS-ESN and service innovation - (H2).

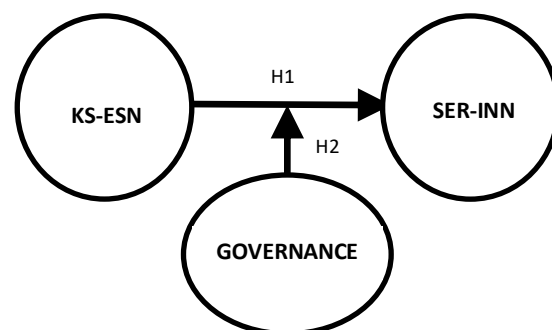


Figure 1 Conceptual model: KS-ESN (knowledge sharing using enterprise social networking), SER-INN (service innovation), GOVERNANCE (includes formal and informal)

3.1 Knowledge sharing using ESN and service innovation

A key factor in innovation is knowledge sharing [5]. Literature suggested that the more employees share knowledge, the more efficient and innovative they are [19]. Both personalized and codified knowledge are important for organisation, as they both share a common goal, i.e. innovation [24]. Although capturing personalized knowledge is difficult because it resides in the minds of individuals, ESN tools such as wikis and blogs can reduce the time to interact and increase better collaboration [27]. Additionally, ESN can change the knowledge management process from one that is centralized and repository-based to one that is decentralized and openly available [9]. This openness can reduce knowledge duplication, enhance innovation [5], as well as increase in productivity [9].

Therefore, the following is hypothesised:

H1: Knowledge sharing using ESN (KS-ESN) is positively related to service innovation (SER-INN)

3.2 Governance as a moderator to relate ESN for knowledge sharing and service innovation

The research question seeks the importance of governance to strengthen the relationship between knowledge sharing through ESN to enhance service innovation in the firm. Previous literature is sought to understand that knowledge governance approach is important to ensure knowledge is valid and reliable [31][32], as well as the importance of social media governance [35][12]. Social media governance refers to policies that give guidance on the use of social media [35] as well as resource allocation [36]. This guideline indicates ‘how to stay safe when connecting with people online’; as well as ‘listening to employees’ voices’ [12]. Such guidelines are an example that can be used to reduce the occurrence of negative outcomes from ESN use such as low productivity, interpersonal conflict and possibility of leaking out sensitive information [10, 11]. For the purpose of this study, the governance is used as a moderator to strengthen the relation between knowledge sharing using ESN and service innovation. Therefore, the following is hypothesised:

H2: Governance positively moderates the relationship between knowledge sharing using ESN (KS-ESN) and service innovation (SER-INN)

3.3 Methodology

We use a mix of interviews and a survey to answer the research questions [38] [39]. A mixed methods design was chosen for two reasons: a) as ESN use is a fairly new area of research, the qualitative methods will be useful to evaluate the appropriateness of the study’s theoretical framework; and b) using different approaches to answer the same research questions (triangulation) reduces the potential for bias in the findings, thereby increasing their reliability.

The context of the study was the finance industry because: a) employee turnover in other service industries such as retail and hospitality are higher than financial institutions, making it less likely that knowledge sharing occurs there over the longer term; and b) financial institutions are known to use technologies to innovate.

The initial contacts with participants were made through the researchers’ own contacts; following that, snowballing was used to contact other participants. The interviewees were selected deliberately because their roles were related to organizational innovation, such as product owners, product developers, innovation managers, marketing specialists, and digital product developers. The semi-structured interviews were recorded, each lasting for 50 to 60 minutes. Once completed, the recorded interviews were transcribed and thematically analysed [40] using *NVivo*, along with memos that were created as part of the study. As data collection is still on-going, this study provides a preliminary work. This research-in-progress paper summarises our initial findings and that other interviews will be conducted soon for this research.

We interviewed five participants from Alpha Bank (a pseudonym) from September 2018 to January 2019.

Table 1. Participants

Participant code	Role	Job tenure	Gender
PtCode1	Product manager	> 5 years	Male
PtCode2	Product Manager	> 5 years	Male
PtCode3	Digital Engagement Manager	1-5 years	Female
PtCode4	Product manager	> 5 years	Female
PtCode5	Financial Advisor/ product developer	> 5 years	Male

Alpa bank, one of the oldest bank in New Zealand, provides four core business functions to its customers: retail banking (i.e., savings and investments, home loans, credit cards, personal loans and insurance); business banking (i.e., transactional bank accounts, investments, loans and finance, and international banking services); institutional banking (i.e., wholesale banking, financial institutions and government entities); and private banking (i.e., wealth planning, investment expertise and global solution). A team comprising staff from product development, marketing, finance, advertising, communication, and IT are constantly collaborating with each other to develop products and services. Alpha Bank's code of practice sets out the principles of good banking practice.

To preserve the anonymity of the interviewees, we use participant code with a corresponding role of each participant (see table 1).

4. Current findings and discussion

As the findings are still at the preliminary stage, in this study we focused on the following points.

Table 2. Main points discussed with participants

Main points	Interview questions
Innovation experience	What are your thoughts about innovation experience in your organization? (Probe: opinion about generating ideas, types of new product/service developed, initiated, people involved etc.)
knowledge sharing experience	What is your perception on sharing information with your co-workers? (probe: knowledge about product/services, sharing knowledge with others, collaborate with other departments, etc.)
Experience with ESN	How do you communicate with co-workers? (probe: face-to-face, email, meetings, etc.); For online communication what tools you use? (probe: intranet, SharePoint, Yammer, Slack, etc.); Do you find these tools challenging to use? Why?
Understanding guidelines	Do you have formal guidelines to develop products? (probe: formal and informal ways to share knowledge, guidelines for using online tools, challenges to follow guidelines etc.)

First, the participants' roles and their experience (Table 1) indicate their expertise in identifying customers' needs. Therefore, there is a need in the second phase (the survey) to identify both the number and the type of innovative products that have been developed by respondents. The findings exhibit the importance of the 'innovation experience' (see table 2) as perceived by the participants and they are aligned with the study based on 'new production and service' [1][16]. We also asked what the term '*generating idea*' meant to the participants to obtain a broader understanding of their view of innovation. They mentioned that it meant '*new product*' (PtCode1), '*come up with improve product*' (PtCode2), to '*identify features that could benefit customers*' (PtCode3), and to '*improv(e) (the) customer experience*' (PtCode4). '*new business lines/functionality*' (PtCode5). These comments indicated the need for the survey to clarify the difference between incremental and substantial innovation, as knowledge sharing through ESN may have different impacts on each of them. Developing an innovative product took, on average, around six months, depending on the number and availability of resources. This is reflected in the following statement:

'The groundwork, such as what to include for product, and scoping in the system takes around three months and then another 2-3 months to rolling out the product and working closely with front staff to make sure they are properly trained and aware of all instructions before delivery to the customers' (PtCode1).

Second, in terms of participants' knowledge sharing experience with co-workers, it seemed they are aware of their team collaboration for acquiring information. This is reflected as:

'Getting people together, helping them to understand different points of view and eventually expecting the right outcomes (PtCode2); *Talking to the right person, locating the expertise with whom information is shared* (PtCode2).

While developing products, employees from different departments collaborate and share their views (Table 2). This interaction builds trust and deepens social relationships among employees. These are thus mechanisms necessary for sharing knowledge in the workplace [21]. Interviewees indicated that while sharing there was as an '*instant responses*' (PtCode1) as well as they could '*acquire knowledge from different places*' (PtCode5). This is further illustrated in the case in relation to using Slack for quick updates and SharePoint to share documents. This shows the use of both personalized and codified knowledge [23] for service innovation [5].

Third, the interviews revealed that participants use a combination of the corporate intranet, email as well as ESN tools (Yammer, Slack, Blogs, etc). The findings

also revealed some challenges to using ESN, as indicated by participants, such as: *'Changing to different channels make people frustrated'* (PtCode3); *'Information overload due to the flow of information'* (PtCode1).

Given the size of sample, we could say that ESN was not fully utilized in the organization, limiting its impact and momentum, and leading to few knowledge-related interactions. This could perhaps be due to employees being more used to viewing social media as a tool for personal (non-work-related) interactions. Also, individuals may have different perceptions about ESN for knowledge sharing. Some may view more as a communication tool for operational purposes than for knowledge sharing.

Forth, the interviews indicated that governance was extensively carried out through a code of practice, and policies and standards. Participants agreed that they were aware of the procedures and that these procedures were necessary for developing products [31]. As indicated by one participant:

'Product governance framework ensures that we are really clear about the process of developing or changing a product' (Ptcode5).

Participants also agreed to standard practice on the usage of social media [12] in general, as depicted by participants:

'You're not allowed to do anything that is deemed either illegal or disrespectful for anybody else against the company's reputation' (PtCode4); *'There are social norms that govern how we communicate with each other'* (PtCode2).

The findings indicated that an organisation's knowledge sharing culture was an important factor for sharing knowledge among co-workers and across departments. All interviewees admitted that their workplace has an open and warm culture that fostered the easy flow of knowledge among co-workers. This theme highlighted the difference between informal governance (culture) and formal governance (policies, codes and standards) [31], as perceived by participants. The interviewees indicated that a knowledge sharing culture is essential to fostering innovation. Participants admitted that the level and nature of knowledge-sharing in their organizations is influenced by the culture of their workplaces. Comments from interviewees included: *'it's an open culture and people work in a non-structured way'* (PtCode1); *'we have very open, warm and communicative culture'*, (PtCode2); *'everyone is welcome to hear what other people are talking about'* (PtCode4); and *'it's very open space, a playful workspace to encourage, inspire and engage employees'* (PtCode5).

The contrast between governance and culture made us consider whether the two concepts were two ends of

a continuum (with culture being closer to informal control) and whether we should include both in the second phase of the study (the large-scale survey).

5. Limitations, contributions, conclusions

The aim of the study is to understand and explain the relationship between knowledge sharing using ESN, innovation and governance. The next step of the study will be to compare the findings from the interviews with the existing theoretical framework of the study and modify it if necessary, before carrying out the survey.

It is worth keeping in mind this study's limitations. First, public-facing (or externally-directed) social media, where firms use public social media platforms to interact with customers and other stakeholders, is not included in this study. This may influence our findings because organizational use of externally-directed social media may be related to their use of internally-directed enterprise social networking. Second, ideally, a longitudinal design would be better than a cross-sectional design because the influence of ESN use on firm innovation may lag behind the adoption and use of ESN. For example, innovation processes, such as feedback-gathering, may need to be adapted when ESN is introduced before it has a visible impact on innovation. Third, we interviewed only five participants from one organization. The findings indicated that ESN was not fully utilized in the organization. As we are expecting more interviews the findings could give a better result. Finally, choosing the finance industry as our research context may bias our results, because, for example, the individuals working in this industry may be more private and less willing to share their knowledge because of strict rules against information-sharing.

Our findings from the interviews have some useful implications for practitioners. They should: a) keep track of the evolving nature of ESN to see how it can best enhance knowledge sharing; b) develop an open culture in their organisations to promote knowledge sharing among employees; and c) publicly demonstrate the impact of ESN use in their organisation to remind employees that they should use it to maximise their firm's return on its investment in ESN. For researchers, this paper contributes by providing a theoretical framework to explain how ESN affects innovation, especially by explaining how governance mitigates the issues related to knowledge sharing using ESN. Future papers from this study will evaluate the usefulness of the framework for explaining ESN's impact.

6. References

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Appendix 1

Internal use of Social Media	Literature
Internal social media	[41]
Corporate social media	[42]
Enterprise social media (ESM)	[6] [10] [11] [25]
Enterprise social networking (ESN)*	[8] [29] [43] [44] [45] [46][47]

The current study is based on ESN (*)